

AMENDMENTS TO THE DRAWINGS:

Applicant submits three replacement drawing sheets including Figs. 1, 10, and 15, in compliance with 37 C.F.R. §§ 1.84 and 1.121. The amendment adds character reference labels and arrows to the distances between items shown in Figs. 1, 10, and 15. Specifically, in Figs. 1 and 15, R1 indicates a distance between object 5 and radiation generating source 30 and R2 indicates a distance between object 5 and radiography panel 41. In Fig. 10, R1 indicates a distance between radiation generating source 130 and imaging object 106, and R2 indicates a distance between imaging object 106 and detector unit 141. Support for the amendment may be found in at least line 20, page 20 – line 19, page 26. No new matter has been added.

Attachment: 3 Replacement Sheets

REMARKS

Claims

In the outstanding Office Action, the Examiner rejected claims 1-8, 10-28, and 30-44. Nevertheless, Applicant wishes to thank the Examiner for indicating that claims 9 and 29 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicant cancels claims 15, 27, 29, and 36-44, without prejudice or disclaimer, and amends claims 1, 3-7, 9, 10, 12, 14, 17, 19-21, 23-25, 28, and 30-34. With entry of this amendment, claims 1-14, 16-26, 28, and 30-35 are pending and under consideration.

Rejections under 35 U.S.C. § 102 (e)

Claims 1-5 and 11-13

The Examiner rejected claims 1-5 and 11-13 under 35 U.S.C. § 102(e) as allegedly being anticipated by U.S. Pat. No. 6,226,353 to Wilkins et al. ("Wilkins"). Office Action at page 2.

Applicants respectfully traverse this rejection. Amended claim 1 recites, in part:

a radiation generation source;

at least one radiation detector to capture a phase contrast radiographic image of an object, **wherein a distance between the radiation generation source and the at least one radiation detector equals $R1 + R2$, where $R1$ is defined to be a distance between the radiation generation source and the object to be radiographed, and satisfying the formula: $10 > R1 \geq (D-7)/200$ (in meters), where D is a focal spot size of the ray generated from the radiation generation source (in μm), and $R2$ is defined to a distance between the object to be radiographed and the at least one radiation detector and satisfying the formula: $R2 \geq 0.15$ (in meters)**

Support for the amendment may be found in at least Figs. 1, 10, and 15, lines 16-17, page 16, lines 11-12 and 20-22, page 17, lines 1-3, page 18, line 24, page 20 - line 5, page 21, line 21, page 21 - line 1, page 22, and lines 7-9, page 66 of the specification.

Wilkins discloses "a method of obtaining a phase-contrast image from a two-dimensional intensity record." Col. 2, lines 13-15. However, Wilkins does not teach or suggest at least **"a distance between the radiation generation source and the at least one radiation detector equals $R1 + R2$, where $R1$ is defined to be a distance between the radiation generation source and the object to be radiographed, and satisfying the formula: $10 > R1 \geq (D-7)/200$ (in meters), where D is a focal spot size of the ray generated from the radiation generation source (in μm), and $R2$ is defined to a distance between the object to be radiographed and the at least one radiation detector and satisfying the formula: $R2 \geq 0.15$ (in meters)"** as recited by claim 1. As Wilkins does not disclose each and every limitation of claim 1 as required for rejection under 35 U.S.C. § 102, Applicant respectfully submits that the rejection of claim 1 should be withdrawn and the claim allowed.

In addition, claims 2-5 and 11-13 directly or indirectly depend from claim 1, as amended. Therefore, Applicant respectfully requests that the Examiner withdraw the rejection of claims 2-5 and 11-13 and allow the claims for at least the same reason as for claim 1.

Claims 25-26 and 31-35

Further, the Examiner rejected claims 25-26 and 31-35 under 35 U.S.C. § 102(e) as allegedly being anticipated by Wilkins. Office Action at page 2.

Initially, the Examiner indicated that claim 29 would be allowable if rewritten to include all of the limitations of the base claim and any intervening claims. Office Action at page 9. Applicant has amended claim 25 herein to incorporate all of the elements of

claims 27 and 29. In addition, Applicant has cancelled claims 27 and 29. Accordingly, Applicant respectfully submits that the Examiner's rejection of claim 25 should be withdrawn.

In addition, claims 26 and 31-35 directly or indirectly depend from claim 25, as amended. Therefore, Applicant respectfully requests that the Examiner withdraw the rejection of claims 26 and 31-35 and allow the claims for at least the same reasons stated previously with respect to claim 25.

Claims 36-44

Further, the Examiner rejected claims 36-44 under 35 U.S.C. § 102(e) as allegedly being anticipated by Wilkins. Office Action at page 2.

Applicant has cancelled claims 36-44 herein. Accordingly, Applicant respectfully asserts that the Examiner's rejections of these claims are rendered moot.

Rejections under 35 U.S.C. § 103

Claims 6-8, 10, 27-28 and 30

The Examiner rejected claims 6-8, 10, 27-28, and 30 under 35 U.S.C. § 103 as allegedly being unpatentable over Wilkins in view of U.S. Pat. No. 6,671,394 to Sako ("Sako"). Office Action at page 7. Applicant respectfully traverses these rejections. As discussed above, amended claim 1 is patentable over Wilkins. Sako discloses image processing for an "X-ray digital photographing apparatus." Col. 1, lines 8-10. But Sako, like Wilkins, also fails to teach or suggest at least **"a distance between the radiation generation source and the at least one radiation detector equals $R1 + R2$, where $R1$ is defined to be a distance between the radiation generation source and the object to be radiographed, and satisfying the formula: $10 > R1 \geq (D-7)/200$ (in meters), where D is a focal spot size of the ray generated from the radiation**

generation source (in μme), and R2 is defined to a distance between the object to be radiographed and the at least one radiation detector and satisfying the formula: $R2 \geq 0.15$ (in meters)," as recited in claim 1. Because the combination of Wilkins and Sako does not teach or suggest each and every limitation of claim 1, Applicant respectfully asserts that claim 1 is patentable over Wilkins in view of Sako.

Claims 6-8 and 10 depend from claim 1, as amended. Accordingly, Applicant respectfully requests that the Examiner withdraw the rejection of claims 6-8 and 10 and allow them for at least the same reasons stated above with respect to claim 1.

Applicant has cancelled claim 27 and thus respectfully asserts that the Examiner's rejection of that claim is moot.

Claims 28 and 30 directly or indirectly depend from claim 25, as amended. Applicant respectfully requests that the Examiner withdraw the rejection of claims 28 and 30 and allow them for at least the same reasons stated above with respect to claim 25.

Claims 14-24

The Examiner rejected claims 14-24 under 35 U.S.C. § 103 as allegedly being unpatentable over Wilkins in view of U.S. Pat. No. 6,510,253 to Yamada ("Yamada"). Office Action at page 8. Applicant respectfully traverses the rejections. As discussed above, amended claim 1 is patentable over Wilkins. Yamada discloses image processing for "various medical image generating systems." Col. 4, lines 44-45. But Yamada, like Wilkins, fails to teach or suggest at least "**a distance between the radiation generation source and the at least one radiation detector equals $R1 + R2$, where $R1$ is defined to be a distance between the radiation generation source and the object to be radiographed, and satisfying the formula: $10 > R1 \geq (D-7)/200$ (in meters), where D is a focal spot size of the ray generated from the radiation**

generation source (in μm), and R2 is defined to a distance between the object to be radiographed and the at least one radiation detector and satisfying the formula: $R2 \geq 0.15$ (in meters)" as recited by claim 1. Because the combination of Wilkins and Yamada does not teach or suggest each and every limitation of claim 1, Applicant respectfully asserts that claim 1 is patentable over Wilkins in view of Yamada.

Claims 14 and 16-24 depend directly or indirectly from amended claim 1. Accordingly, Applicant respectfully requests that the Examiner withdraw the rejection of claims 14 and 16-24 and allow the claims for at least the same reasons given above regarding claim 1.

In view of the foregoing amendments and remarks, Applicant respectfully requests reconsideration and reexamination of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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Dated: December 21, 2004

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Attachments: 3 Replacement Sheets

